

**REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow. Claims 1-18, 25-29, 35-37, 39-42, and 44 remain pending in this application.

Applicant wishes to thank the Examiner for the careful consideration given to the claims.

**Rejection of Claims based on Judge and Cothrell**

Claims 1, 5, 9, and 36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,682,444 (“Judge”) in view of U.S. Patent 4,525,955 (“Cothrell”). For at least the following reasons, this rejection is traversed.

Claim 1 recites “a shoe set comprising a first shoe of a width and a second shoe of the same width spaced apart from each other by a distance of the width times an integer...wherein the film feeder is configured to feed the film by an amount of the distance.” Neither Judge, Cothrell, nor any combination thereof discloses this feature, as conceded by the PTO. (See paragraph 7 of the Office Action dated October 24, 2006.) However, the PTO asserts that it would have been obvious to provide any spacing of the shoes desired “since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.” (Paragraph 7 of the Office Action dated October 24, 2006.) This rejection is improper because the PTO has not presented any prior art or evidence aside from the present disclosure that the spacing of the shoes is a result effective variable. According to MPEP 2144.05, “[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).” In this case, the PTO has not provided support aside from the present disclosure that the spacing of the shoes is a result effective variable. Because it has not been established in the prior art that the spacing of the shoes is a result effective variable, there is no support for the assertion that one with ordinary skill in the art would be motivated to optimize the shoe spacing.

The PTO has asserted that “Judge discloses setting the shoes the required distance to lap the work piece, dependent on the size of the work piece and the required rate of material removal. See figures 4 and 5 and column 6, lines 61 through column 7, lines 9.” (Paragraph 5 of the Office Action dated April 10, 2006.) However, Judge does not discuss the setting of

the distance between the shoes but merely discloses that angle C, which is shown in Fig. 4 and is the maximum range of the point of contacts of the shoes 36, “should be at least 120° and preferably about 160° to provide improvements in terms of part geometry correction and rate of material removal as compared with shoes having a lesser range of angular contact. Improvements in part geometry correction are believed attributable to the fact that, with a larger angle of contact (Angle C), the shoes more closely approximate a cylinder themselves and therefore force the workpiece to assume such a configuration. The increase in material removal rate is believed attributable to a wedging effect wherein the contact pressures existing at the outer ranges of contact of the shoe are greater.” (Column 5, line 61 to column 6, line 9 of Judge.) The maximum range of the point of contacts is quite a different thing from the spacing of the shoes. Thus, Judge does not teach that the spacing of the shoes is a result effective variable to be optimized but, at best, may indicate that the maximum range of the point of contacts of the shoes 36 (i.e., Angle C) may be an result effective variable.

Also, Judge discloses a microfinishing apparatus having a shoe assembly comprising a plurality of shoes spaced apart from each other but is silent about the distance between two neighboring shoes and about the specific distance as claimed in independent Claims 1 and 36. The distance between two neighboring shoes in the present invention is determined by a shoe width and an integer, not by the required rate of material removal as the PTO contends.

Furthermore, claim 1 requires that the film feeder is configured to feed the film by an amount of the distance of the width times an integer. Judge does not teach or suggest this film feeder but merely discloses “a predetermined length of new abrasive material is brought into the shoe assembly.” (Column 4, lines 42-46 of Judge.) The PTO asserts that:

Judge discloses that the indexing of the tape is such that a predetermined length of new abrasive material is brought into the shoe assembly, such that the abrasive surface is constantly renewed. The indexing would, as disclosed by Judge, have to prevent overlapping and use of old abrasive surface. The indexing must inherently taking into account the size of the shoe surface and the number of shoes contacting the work piece, and the tape must be indexed by at least the size of the shoe times the number of shoes, to present the work piece an abrasive surface that is renewed. (Paragraph 5 of the Office Action dated April 4, 2007)(emphasis added).

First, it should be noted that claim 1 requires “wherein the film feeder is configured to feed the film by an amount of the distance” wherein the distance is “the width [of the shoe] times an integer.” The assertion that the tape of Judge must be indexed at least the size of the shoe times the number of shoes does not necessarily mean that the film feeder is configured to

feed the film by the amount of the width times an integer. Indeed, the use of the PTO's modifier "at least" would seem to indicate that the PTO does not believe that the teachings of Judge indicate that the distance is the width of the shoe times an integer, but is greater than that amount. At best, the PTO seems to be asserting that the index spacing would be inherent (based on the size of the shoe surface and the number of shoes) and that the distance may be the width of the shoe times the number of shoes. However, according to MPEP 2112, "the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)." Thus, the assertion by the PTO that the indexing distance is at least the width of the shoes times the number of shoes is insufficient to read on claim 1 because there has been no teaching or suggestion that would lead one with ordinary skill in the art to conclude that the indexing distance of Judge is the width of the shoe times an integer, as opposed to being greater than the width of the shoe times the number of shoes.

Also, Judge does not disclose or suggest that the film feeder is configured to feed the film by an amount of the distance, i.e. shoe width times an integer, as recited in independent claims 1 and 36, or that the distance is equal to the number of shoes times the number of shoes. The amount of feed by Judge corresponds to the overall length of shoe set assembly while the amount of feed in the present invention is equal to the distance between two neighboring shoes, which is much smaller than the overall length of shoe set assembly, thus preventing a waste of lapping film. Judge never uses a fresh film surface between either two neighboring shoes that is left unused in a previous lapping process, resulting in a waste of fresh film surface.

Cothrell does not cure the deficiencies of Judge. Thus, claim 1 is not rendered unpatentable over the prior art.

Claims 5 and 9 depend from and contain all the features of claim 1, and are allowable therewith for at least the same reasons as claim 1, without regard to the further patentable features contained therein.

Claim 36 recites "a shoe set comprising a first shoe of a width and a second shoe of the same width spaced apart from each other by a distance of the width times an integer...wherein the film feeding means is configured to feed the film by an amount of the distance." Neither Judge, Cothrell, nor any combination thereof discloses or suggest these

features because the PTO has not established that the spacing of the shoes is a result-effective variable. Also, any combination of Judge and Cothrell does not teach or suggest the claimed film feeding means because Judge merely discloses "a predetermined length of new abrasive material is brought into the shoe assembly" (column 4, lines 42-46 of Judge), and Cothrell does not cure these deficiencies. Thus, claim 36 is not rendered unpatentable over the prior art.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date

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